

CLAIM LISTING

1. (Currently amended) A broadband cable modem termination system for managing data transmissions through a broadband network that interconnects a plurality of end user locations and a head-end via a cable modem which has an upstream component for multi-point end user to single point head-end upstream signaling and a downstream component for single point head-end to multi-point end user downstream signaling, said broadband network comprising a hierarchical network having at least two levels, said broadband cable modem termination system comprising:

~~downstream data transmission~~ broadband cable modem component means, located at a first level of said hierarchical network, for transmitting data in a downstream direction from a source of program material at said head-end to selected ones of said plurality of end user locations; and

~~upstream data transmission~~ broadband cable modem component means, located at a second level of said hierarchical network, for transmitting control data received from at least one of said plurality of end user locations in an upstream direction to said head-end, wherein said second level is located downstream of said first level in said hierarchical network.

2. (Currently amended) The broadband cable modem termination system of claim 1 wherein said ~~downstream data transmission~~ broadband cable modem component means comprises:

means for converting data received in digital baseband IP format to data in a radio frequency based format for transmission to selected ones of said plurality of end user locations.

3. (Currently amended) The broadband cable modem termination system of claim 2 wherein said ~~upstream data transmission~~ broadband cable modem component means comprises:

means for converting data received in a radio frequency based format to data in digital baseband IP format for transmission to said head-end.

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4. (Currently amended) The broadband cable modem termination system of claim 1 wherein said downstream ~~data-transmission~~ broadband cable modem component means and said upstream ~~data-transmission~~ broadband cable modem component means operate independent of each other.

5. (Currently amended) The broadband cable modem termination system of claim 1 wherein said upstream ~~data-transmission~~ broadband cable modem component means comprises:

means for converting data received in a radio frequency based format to data in digital baseband IP format for transmission to said head-end.

6. (Currently amended) A method of operating a broadband cable modem termination system for managing data transmissions through a broadband network that interconnects a plurality of end user locations and a head-end via a cable modem which has an upstream component for multi-point end user to single point head-end upstream signaling and a downstream component for single point head-end to multi-point end user downstream signaling, said broadband network comprising a hierarchical network having at least two levels, said method of operating a broadband cable modem termination system comprising ~~the steps of~~:

transmitting data from a downstream ~~data-transmission~~ broadband cable modem component apparatus, located at a first level of said hierarchical network, in a downstream direction from a source of program material at said head-end to selected ones of said plurality of end user locations; and

transmitting control data from an upstream ~~data-transmission~~ broadband cable modem component apparatus, located at a second level of said hierarchical network, and received from at least one of said plurality of end user locations in an upstream direction to said head-end, wherein said second level is located downstream of said first level in said hierarchical network.

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7. (Currently amended) The method of operating a broadband cable modem termination system of claim 6 wherein said step of transmitting data from a downstream ~~data transmission~~ broadband cable modem component apparatus comprises:
converting data received in digital baseband IP format to data in a radio frequency based format for transmission to selected ones of said plurality of end user locations.

8. (Currently amended) The method of operating a broadband cable modem termination system of claim 7 wherein said step of transmitting control data from an upstream ~~data transmission~~ broadband cable modem component apparatus comprises:
converting data received in a radio frequency based format to data in digital baseband IP format for transmission to said head-end.

9. (Currently amended) The method of operating a broadband cable modem termination system of claim 6 wherein said step of transmitting data from a downstream ~~data transmission~~ broadband cable modem component apparatus and said step of transmitting control data from an upstream ~~data transmission~~ broadband cable modem component apparatus operate independent of each other.

10. (Currently amended) The method of operating a broadband cable modem termination system of claim 6 wherein said step of transmitting control data from an upstream ~~data transmission~~ broadband cable modem component apparatus comprises:
converting data received in a radio frequency based format to data in digital baseband IP format for transmission to said head-end.